

Supplementary 1. The variables definition and their categorization used in this analysis, South Sudan Household survey 2010

VARIABLES	DEFINITIONS AND CATEGORIZATION
INTERMEDIATE DETERMINANTS	
<i>SOCIOECONOMIC POSITION</i>	
Community factors	
<i>Type of cluster</i>	<i>Type of cluster</i> (1= Urban; 2 = Rural)
<i>Geographical Regions</i>	3 regions of South Sudan namely: 1= Greater Upper Nile (consisting of Unity, Jonglei, Upper Nile) 2= Greater Bahr el Ghazal (consisting of Lakes, Western Bahr El Ghazal, Northern Bahr El Ghazal, Warrap), 3 = Greater Equatoria (consisting of Central Equatoria, Western Equatoria, Eastern Equatori)]
<i>Mean household wealth index in the cluster</i>	Mean household wealth index in the cluster
<i>Proportion of mothers with intermediate school education in the cluster</i>	Proportion of mothers with at least intermediate school education in the cluster
<i>Mean number of antenatal care visits in the cluster</i>	Mean number of antenatal care visits in the cluster (only for the most recent birth prior the survey)
<i>Percentage of deliveries assisted by trained birth attendants in the cluster</i>	Percentage of births in the cluster assisted by trained birth attendants (only for the most recent birth prior the survey)
<i>Percentage of mothers receiving postnatal care in the cluster</i>	Percentage of mothers in the cluster who received postnatal care (only for the most recent birth prior the survey)
Household factors	
<i>Household wealth index</i>	Composite index of household possession (1= Wealthier, 2 = Middle and 3= Poor)
<i>Gender of household head</i>	Household head (1= male, 2 = female)
<i>Education of the household head</i>	Highest levels of schooling obtained (1 = Secondary + education, 2= Primary education, 3 = No education)
<i>Maternal education</i>	Maternal highest levels of schooling obtained (1 = Intermediate + education, 2= Primary education; 3= No education)
<i>Maternal literacy</i>	Maternal literacy [1 = Yes: able to read; 2= No: cannot read at all]]
<i>Maternal marital status</i>	The maternal marital status (1 = Never married (single); 2 = Formerly married (if woman is widowed, divorced or separated); 3 = Currently married
<i>Polygamy status</i>	The status of husband having more than one wife 1 = (No) if a husband have one wife); (2= (Yes) if a husband have more than one wife
<i>Individuals circumstances</i>	

Maternal condition/Behaviours	
<i>Maternal age at her last birthday (years)</i>	Age of a mother on her last birthday (1= 20-34 years, 2=15-19 years and 3= 35-49 years)
<i>Heard about family planning</i>	Mother have heard about family planning (1= no, 2 = yes)
<i>Ever had child who later died</i>	Ever had child who later died (1=No, 2 =Yes)
<i>Cooking location</i>	Cooking location (1= kitchen, 2= Elsewhere in the house, 3= Outdoors)
<i>Garbage disposal</i>	Garbage disposal [1= Burning, 2= Dumping (Throwing outside the house)]
<i>Mother experience domestic violent</i>	Mother experience domestic violent in the past year (1= no, 2=yes)
Under-five condition	
<i>Child's gender</i>	Gender of under-five children (1=female, 2 = male)
<i>Family have access to improved source of drinking water</i>	Access to improved source of drinking water {1= yes (improved water defined as: <i>piped water (into dwelling, compound, yard or plot, to neighbour, public tap/standpipe), tube well/borehole, protected well, protected spring, bottled water and water transported by tankers/carts from improved</i>), 2 =no (unimproved defined as: <i>unprotected well, unprotected Spring, unfiltered Water from river, stream, dam, hafir, Water transported by tankers/carts from unimproved source and bottled water if the household is using an improved water source for hand washing and cooking</i>)
<i>Family have access to improved sanitation facilities</i>	Access to improved sanitation facilities (1=Yes, 2=No)